

# Identification of an Upper Bound for Retrospective Voting

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## Abstract

*Retrospective voting is a concept key to normative ideals of democracy and as such its volume, influence, and mediators have all seen extensive scholarship. What past inquiry has left open is the question of how much retrospective evaluation can take place under ideal circumstances. To answer this question, this work outlines criteria for identifying an ideal context – clarity, simplicity, and motivation. Empirically union locals are used as a close approximation of ideal conditions for retrospection. Union locals have the advantage of having clear performance signals, a well-defined motivation for sanctioning, and the lack of complexity-inducing features like partisanship. In order to causally identify the effect of performance in this environment, the Covid-19 economic shock is used as industries were affected in dramatically different ways exogenous to union local features. The results which come from this analysis identify such a relationship, but substantively it appears weak.*

## I. Introduction

Retrospection has long held a place in political science scholarship due to its use as a mechanism for building accountability in democratic theory. Its narrative trajectory as an area of study has followed a path well-worn among the social sciences; theories of retrospection were built and when they were initially tested it was revealed that behavior of interest existed empirically but did not dominate in a way that would be normatively ideal. What has followed is a voluminous debate over size of retrospection (Kayser 2014), its influence (Otjes and Stiers 2021), how best to measure it (Dassonneville and Lewis-Beck 2017), and what factors mediate its presence (Valdini and Lewis-Beck 2018) among other topics. Of interest here is the last of these items, particularly

as it relates to institutions, which are objects we can at least dream of altering. After having spent such a long time trying to identify the limitations that exist on retrospective voting and the best ways to find evidence of retrospective behavior, an interesting empirical question arises: what does retrospective voting look like in an ideal context? Answering this question is of particular importance as pursuing retrospective voting as a tool of accountability would be a poor investment of effort if there turns out to be a low ceiling for voter engagement in that behavior.

The first major obstacle to answering this inquiry is the lack of an extant theory which can systematically understand the relational or cumulative influence of the various mediating institutions that scholars have identified. The first step of this work to remedy this is to first identify the relevant cognitive features of individuals. From there three dyads of cognitive feature and institutional characteristic are proposed: *motivation* and *incentive*; *bias* and *clarity*; and *limitations* and *simplicity*. The relations between these dyads run in the same direction, and thus they can neatly be cumulated in the singular concept of *institutional facilitation* which mediates the abundance of retrospective voting.

This theoretical framework is used to clearly identify a proximately ideal context for retrospective voting – executive elections in union locals. Union locals are useful because of several features which diverge from the political contexts that are typically considered. The motivation to act retrospectively is clear when the union president’s contract negotiations and handling of grievances have a direct impact on personal wellbeing. Clarity is high due to the fact that union officers are voluntarily associated with higher levels of administration and perform most vital union tasks anyway. Finally, union locals exhibit simplicity in the sense that the responsibility of an officer – to maintain the wellbeing of union members in their terms of employment – is much narrower than even the varied obligations of a local government official. To identify the degree

of retrospection taking place in this proximately ideal context, the research design took advantage of the fact that unions operate in different industries while having broadly the same institutions. Within this logic, the Covid-19 recession was used as a natural experiment in which some industries (such as hospitality, government, and education) faced truly dire economic circumstances while others (such as transportation, mining, and information) faced essentially no negative ramifications. Locals of three unions (the SEIU, AFT, and NTEU) – were chosen as the treated group in a Difference in Difference analysis, while locals of three others (the CWA, SMART, and UMW) represented the untreated group. A further six unions provided for a replication of the primary model.

Results of this analysis suggest that exposure to the economic shock caused a 16.09% decline in the odds of a union executive being retained. This result is in line with the basic expectations of the theory of retrospective voting, but there is some room to interpret it substantively. Given the near-apocalyptic conditions faced by the treated industries in the Covid-19 recession, the position of the paper is that it is a surprisingly light effect.

## **II. Retrospective Voting**

To provide some introduction to the topic, there is a voluminous literature attesting to a connection between the objective state of the world and voting behavior which has fallen under the aegis of retrospective voting (Lewis-Beck 1986, 1988; Reidy et al. 2018). The typical mechanism connecting retrospection to behavior is one of reward and punishment (Lewis-Beck and Stegmaier 2000). A voter looks back on the past actions and outcomes of an incumbent, judges it, and decides whether to keep or jettison them. Complexity arose for retrospective voting as it became clear that heterogeneity in effects was widespread (Duch 2001; Kayser 2014). Thus, an even more voluminous debate followed on what explains variation in retrospective voting.

### *Institutional Limitations*

The first major task of this paper is to identify and discuss the institutional mediators which have already been uncovered. A helpful, extant way of organizing the scholarship on the limitations of retrospective voting is the model offered by Healy and Malhotra (2013). They divide retrospection into four discrete steps – observation, evaluation, attribution, and manifestation (although not exactly in that order).

Where institutions fit in to the first two steps is presaged neatly by Holbrook and Garand's (1996) insight that the quality of retrospective voting hinges on the quality of information that voters have. One direction that this argumentation can go is in explaining individual level differences in retrospective behavior, but the starting point of scholars like Alt et al. (2016) is that voters exist in markedly different information environments which systematically influence their capacity to gain high quality information. Specifically, Alt et al. consider variation in the credibility of the sources, finding that capacity to vote retrospectively is heavily reliant on presence of a trusted, neutral information-disseminating institution like the Danish Central Bank – a conclusion since supported in other domains (i.e. Winters et al. 2020). Another institution that has been identified for its interaction with key retrospective information is the length of tenure for incumbents. Given findings of a strong recency bias in evaluating performance, Huber et al. (2012) argue that voters are limited in their capacity to make judgements of incumbents with long terms.

The preponderance of investigation has been on the third step of Healy and Malhotra's model – attribution. A common thread in works of this persuasion is the idea of 'clarity of responsibility' – a concept which entails the ease with which a specific political figure can be tied to discrete outcomes (Powell and Whitten 1993). The specific institutional features which have been suggested as mediators for this type of clarity range from government cohesion (Hobolt et al.

2013), to the nature of alteration in power (Otjes and Stiers 2021), to the degree of fragmentation in party systems (Singer 2020). An especially common connection has been to the responsibility-obfuscating influence of devolved governance, where economic policy takes place on several levels but is largely experienced as a single political object (Anderson 2008; León and Orriols 2016). A more indirect connection comes in the form of work such as that of Ebeid and Rodden (2006) on the mediating influence of the structure of different economies, as the mechanism of interest is ultimately the balance of clarity between exogenous and endogenous influences on the economy. The broad influence of this class of clarity-inducing institutions has been further attested by Valdini and Lewis-Beck (2018).

Institutional limitations have also been discussed in relation to the manifestation of retrospective voting. Sanders and Carey (2002), for instance, make the key point that voters need to have an alternative to turn to in order for them to reward or punish incumbents in a meaningful way. Besides the obvious implication for dominant-party contexts, Indriðason et al. (2017) discuss how the culprits of past mismanagement can take advantage of issues made salient by crisis to reclaim votes; by being the only party talking about those salient issues, voters who care about such things are forced into making a vote choice which breaks with what retrospective evaluation would suggest.

A discussion of institutional influences on retrospection would be remiss, however, if it did not acknowledge the countervailing perspective. Most influentially, Dassonneville and Lewis-Beck (2017) found no evidence of institutional rules or power patterns on economic voting in a cross-national context. Kosmidis (2018) similarly suggested that the size of economic vote does not vary with a key institutional attribute of room to maneuver. Dassonneville and Lewis-Beck (2019) have also observed stable economic vote over time, further questioning the dimensions on

which institutions could influence retrospection. While undoubtably compelling, the present purpose of this work is not to adjudicate the claims of other scholars; thus, for the time being it will rely on scholarship before and after those works such as that of Valdin and Lewis-Beck (2018) which have continued to identify some impact of institutions or the argument of Otjes and Stiers (2021) that political information and clarity are necessary conditions for economic voting not moderators.

### **III. Cognitive Characteristics of Voters**

At this point it is worth bringing to attention a weak point of the schema just used to organize scholarship on institutional limitations and to a lesser degree the way that its constituent works relate themselves to one another. Namely that is not possible to easily discern what exactly is being moved by these different institutions which then causes retrospective voting to be reduced or expanded. This is not to say that scholars have neglected to individually provide mechanisms for the behavior they anticipate, as they certainly have for the most part, but rather that there isn't a systematic way to understand their relational or cumulative influence. A first step to providing a tool to doing so is rooted in identification of those aspects of individuals that institutions can influence.

The first such characteristic of individuals is the fact that they are driven by motivation. The unsurprising observation of scholars such as Prior and Lupia (2008), is that people require some compelling reason to exert effort. In their context of interest, survey responses lack deep thought without incentives. Singer (2011) has established this logic in the realm of economic voting – voters must first care about the economy to even engage in the behavior at all. What's more, Prior et al. (2015) identify that there are many types of motivation, which are typically not aligned with scholarly ideal of factual accuracy unless a particular incentive leads people to it. A common alternative motive is consistency, whereby individuals might choose against acting in

accordance with objective information in order to instead satisfy a psychological need (Anderson and Tverdova 2004).

Another politically relevant feature of cognition is the well-attested complex of biases that pervade our judgments and perceptions. The early insight of Loftus (1979), for example, was that memory is malleable, and can be easily altered by introduction of incorrect information. The common alternatives to relying on memory – heuristics and other cognitive shortcuts – are also fraught with points where bias can enter. For instance, Tversky and Kahneman (1974) argue that individuals never infer statistical rules that would make heuristics effective and Dancey and Sheagly (2013) point out that voters using heuristics necessarily miss counter-stereotypical features of the world. A number of scholars have identified the weak point of benchmarking in the judgement process of political objects, as voters can easily decide upon improper anchors to evaluate by which then deeply colors their perceptions of the world even if they started out with objectively correct information (Leigh 2009; Healy et al. 2010; Campello and Zucco 2016).

An especially potent distortion stems from what Taylor and Doria (1981) describe as a group-serving bias. A variety of works have detailed partisan loyalties to have a strong influence on perceptions of reality, bending interpretation of events in favor of the preferred group (Bartels 2002; Anderson et al. 2004). Tilly and Hobolt (2011) established a similarly convenient bent to attribution of blame for negative objective conditions.

A final pertinent attribute of individuals is that there are predictable limits to capacity for cognition. An extremely well-attested example of such a limit is the small size of working memory. Working memory can be summarized as the in-between point of the world of external objects and internal processing – a buffer which can handle only around seven elements at a time (Saaty and Ozdemir 2003; Cowan et al. 2004; Baddeley 1992; 2010). Shick et al. (1990) provide an example

of what happens when the demands of an information context overcome the time available to process that information – what they call information overload. In essence, the processing of information breaks down entirely. Jones (2001) posits something of a mechanism for this breakdown in that the ability to identify relevant stimuli is greatly limited when presented with overabundance of information, thus making the environment very difficult to impossible to parse.

#### **IV. A Theoretical Framework of Institutions and Retrospection**

Equipped with a long list of limiting institutions and three cognitive features which can be moved by them, it is now possible to start constructing a framework which can parse the relational influence of existing points of scholarship. It makes sense to first of all lay out the definition and aim of the behavior of interest – retrospective voting. In the broadest sense a vote is retrospective to the degree in which past information about an incumbent shapes an individual's choice to vote for or against that incumbent. Note that this definition alone doesn't give much context to the reason that scholars care about retrospective voting in the first place. What scholars really care about is retrospection with the capacity to induce accountability behavior within incumbents. The common assumptions (often implicit) which underly such retrospection is that voters need to correctly judge past performance which requires that their perceptions of the past be unbiased both in substance and in scope. Thus, the definition that this work will proceed with is as follows: a voter acts retrospectively to the degree in which they use unbiased, full information about an incumbent's past actions in their determination of whether to keep or remove that incumbent. With this benchmark of behavior in hand, we can now proceed to discuss the fundamental barriers to retrospection and abstract institutional responses to each.

The first assumption to be made is that individuals require motivation to engage in any given behavior, such as retrospection. *Motivation* is here understood as an internal desire to act in a certain way. One could reasonably argue that *motivation* aimed at retrospective evaluation is



composed largely of immutable pre-political characteristics but given that we live in a world of dynamic rather than static patterns of human behavior it will here be assumed that some amount of *motivation* is shaped by context.

With regard to institutions the claim that will be staked here is that motivation can be shaped by *institutional incentives*, defined as structural features which systematically produce outcomes of different qualities based upon what behavior by individuals is exhibited. For any given behavior the property space of *institutional incentives* ranges from a maximal negative outcome from engaging in that behavior, to a neutral outcome, to a maximal positive outcome. *Motivation* is induced by the presence of systematically positive outcomes and reduced by the presence of negative ones. A simple example of an *institutional incentive* altering motivation is offered with the work of Prior et al. (2015); giving people money upon answering questions accurately caused them to answer more questions accurately.

Another fundamental assumption is that regardless of *motivation*, people are subject to *cognitive bias* which hinders their capacity to perceive and make judgements about the empirical world. For the purposes of this paper *cognitive bias* will be defined as the degree to which an individual's perception of the world systematically deviates from a scientifically observable consensus. If the economy is objectively doing poorly yet partisan attachment influences a person to assert the opposite, then they are the subject of *cognitive bias*. The challenge this presents to retrospective voting is that retrospections cannot be accurate if the perceptions they are built are not so.

Similar to *motivation*, the present work takes as its starting point that expression of *cognitive bias* varies to some degree in accordance with context. While institutions are unlikely to have much influence over the basal sources of bias in humans, they do shape the opportunities for

bias to manifest itself. This capacity of institutions can be conceptualized as *institutional clarity*, or the degree to which an institution offers unambiguous information and choices to voters. By offering unambiguous signals of performance, institutional clarity reduces the capacity of *cognitive bias* to make final judgements which deviate substantially from reality. A clear illustration of this point lies within the aforementioned clarity of responsibility literature. If it is not clear who is responsible for the economy, then it is not so hard to choose the political actor to blame which is most congruent with preexisting political preferences. If there is no question who is to blame for the economy, then for bias to manifest it must flow through the more extreme pathway of denying reality altogether.

A final assumption about voters that will be made here is that individuals face very real *cognitive limitations* which restrain their judgements even when they are otherwise motivated and unbiased. What *cognitive limitations* mean denotatively is the limits of human information processing which, upon being reached, cause a premature end to consideration of the issue at hand. This is a very much dichotomous concept wherein a feature of human cognition either does or does not imply premature end to consideration. Limited working memory, information overload, and recency effects would all be examples of such limitations. The implication of these limits for retrospective voting is that retrospective evaluations may not be accurate enough to induce accountability if their construction is incomplete as a result of limited capacity to process information about past actions.

Unlike the other two limitations, not much needs to be done to find where variation in expression of *cognitive limitations* might arise. Institutions have broad control over information environments and the choices citizens are presented with; to avoid meeting the *cognitive limitations* of individuals, then, all an institution must do is ensure that the volume, structure, or

content of an information environment does not exceed those limits. Here this characteristic will be called *institutional simplicity*, understood more formally as the degree to which an institution has lowered the required cognitive capacity to process information signals in their entirety. A concrete example of movement along this concept space would be going from a politician with myriad areas of responsibility, like a mayor, to an actor with only a single responsibility like a minister of labor. In the former case the volume of information inputs are extremely high (there being multiple signals of performance about each area of competency) while in the latter the volume would be comparatively low, and hence the chances that the volume of information would exceed common *cognitive limitations* would be much lower.

The contribution of this work thus far has been to identify three key features of voters that might limit retrospective voting behavior – *motivation*, *cognitive bias*, and *cognitive limitations* – and link them to three broad domains of institutional features which interact with these limitations. Individually each of these links are fascinating, and indeed my claim would be that past literature on retrospective voting can easily be classified by which limitation-institution link a work focuses on, but in the empirical world limitations and institutional features never exist independently of one another. The implication of this is that the outcomes of each pairing should have some cumulative influence. It is precisely this cumulative influence that bears some investigation, since it has only been systematically identified in this work.

The cross-domain conceptualization of institutional influence will be hereafter referred to as *institutional facilitation*. *Institutional facilitation* is defined as the degree to which institutional features limit or exacerbate basal human barriers to engaging in retrospective voting. At one end one can imagine an arrangement of institutions which amplifies the impact of human limitations to the extent that no retrospective voting takes place. At the other extreme there could be an

arrangement of institutions which eliminates all barriers to retrospective voting, resulting in every voter engaging in that behavior. The interaction of *institutional facilitation* with the prior discussed specific institutional domains will here be assumed to be an additive one for the sake of simplicity. This formulation is aided by the fact that the concepts of institutional incentives, institutional clarity, and institutional simplicity all move in the same direction regarding the facilitation of retrospective voting by design.

The final logic connecting institutional facilitation with retrospective voting is straightforward. When institutional facilitation rises, the implications is that the influence of various limiting factors on the prevalence of retrospective voting decreases. As a result of this decline in influence, the proportion of voters in the population who exhibit retrospective behavior should increase, other things equal. This can be expressed in a more summary fashion as follows: As institutional facilitation of retrospective voting increases, more voters will engage in retrospective voting.

## **V. Data and Design**

With a unified theory of institutional facilitation and its components, we have the base tools to pursue the central question of this paper – what retrospective voting looks like in (proximately) ideal conditions. The first step in doing so is to identify a context which exhibits a constellation of institutional features which correspond roughly with the maxima of the property spaces of incentives, clarity, and simplicity. The case that has been chosen here is the election of local executives in union locals in the United States.

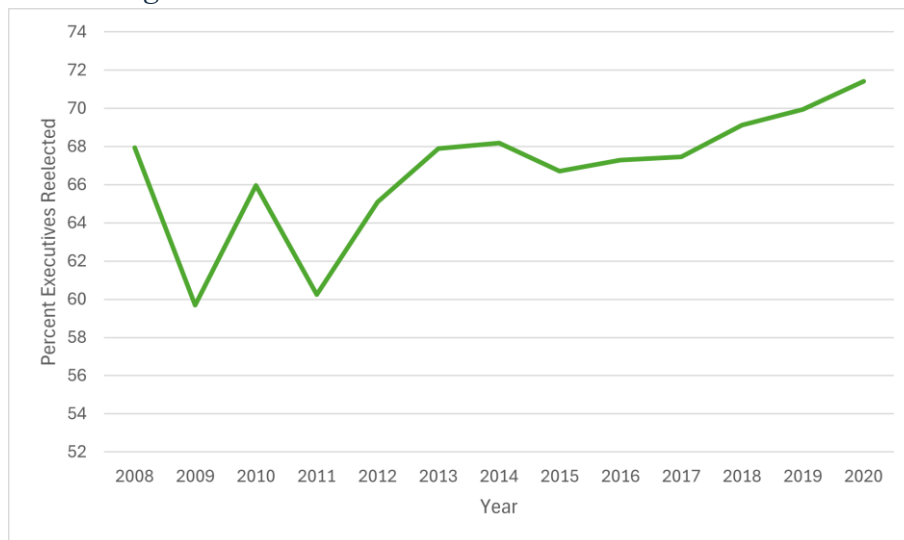
The basic rules governing union elections are contained in the Labor-Management Reporting and Disclosure Act of 1959, ensuring union locals maintain broadly similar institutions. As per the dictates of that law, all union officers must be elected both on a national and local level; for local unions these elections must take place at least every three years. Union officers are

disallowed from using their positions to electorally advantage themselves, and unions are required to make available the member list and means of information distribution of the union to any electoral challenger.

Aside from these basic rules, union locals have a number of features which are both divergent from typical electoral contexts and amenable to institutional facilitation. In terms of *institutional incentives*, unions are distinct in that there exists a clear relation between the contract that union local presidents negotiate and the wages and conditions of labor for each union member. To entertain the incumbency of an incompetent union president is to very directly sacrifice your own wellbeing and those of your coworkers.

The case of *institutional clarity* is somewhat more complex. Union locals are associated with national unions such as the “United Auto Workers” who are in turn attached to federations of national unions such as the “AFL-CIO”. At first glance this seems very much like a devolution of power much like that identified as a limiting factor for retrospection by past scholarship. Unions differ crucially in two respects from such federal contexts. The first is that, while budgets and large-scale action may be centralized on the national level (Thomas 2017), the vast majority of negotiations and services offered by unions occur at the level of the shop floor (Flynn et al. 2004). What one sees, then, is something of a specialization of activities at different levels, rather than the overlapping responsibilities which typically define problems of clarity. The second is that associations between locals and national unions are entirely voluntary, and it is by no means unheard of for disaffected locals to switch affiliations or even form together to start a new national union. Thus, in a way that is very different from typical political contexts, even the trickle down of upper-level decisions can unambiguously be attributed to the action or inaction of the local’s president.

*Figure 1: Union Executive Retention Rates Over Time*



Regarding *institutional simplicity*, unions also hold an advantage over usual contexts. Primary among these is the fact that union officials have a narrow and well-defined set of responsibilities – union constitutions often explicitly identify elected officers as responsible above all else for the employment wellbeing of their members. While there are certainly multiple aspects to wellbeing, these are few in number compared to the range of social, economic, and political obligations of even a lower-level official in a traditional governing context.

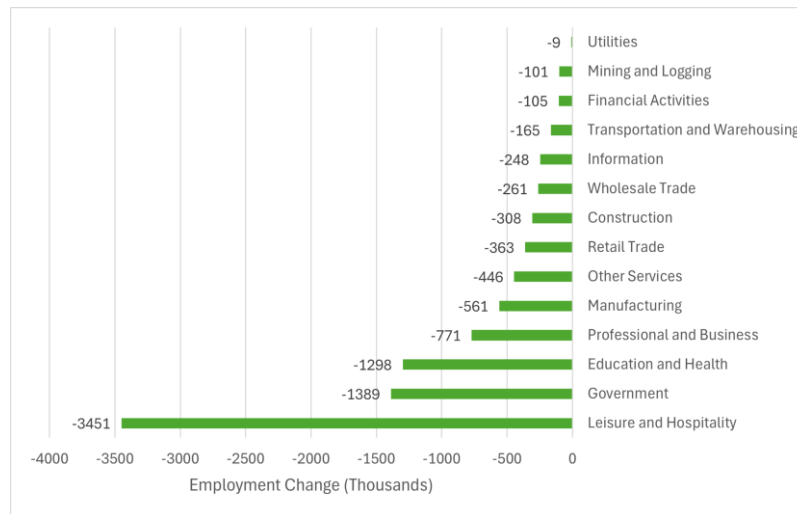
In practice union democracy looks in some ways distinct and, in some ways, familiar. A quick calculation of average retention rates for union executives by year is visualized in Figure 1. The average retention rate of roughly 68% is somewhat lower than institutions like the U.S. House, but still paints a picture of a political environment dominated by incumbents. In the period of observation there seems to be a slight upward trend in retention rates, although this may be an artifact of a simultaneous reduction in data entry errors as Labor Management forms have moved from scanned documents to fully digital submissions. It's hard to say without context what the downward spikes in 2009 and 2011 represent, but they luckily fall outside of the full range of consideration for the present analysis. On the other hand, contrasting with traditional democratic environments, a common observation of elections within unions has been the fact that internal

factions analogous to parties rarely appear, and thus contestation is typically sporadic and individualized (Voss 2010). For the purposes of retrospective voting this often-lamented feature is actually a boon in the sense that there is no contaminating influence of partisan or factional loyalties.

The data to be used come from Labor Management Reports that all unions in the United States are required to file with the Office of Labor Management Standards yearly. The intent of these reports is to provide transparency to the financials and internal workings of unions, and as such they contain a wealth of information on those topics. They are available in a summarized digital format (although incomplete) from 2000 and reach full coverage in roughly 2004. The primary weakness of these reports for identifying retrospective voting is that there is no direct measure of voting behavior. There are, however, two pieces of key information which allow a measure to be constructed. The first is the name and status (i.e. new or outgoing as of this report) of all elected officers, including presidents which is the group of interest here. The second is the date of the next election. Temporally then, you can identify whether any in year past 2007 or so a given local had an election. Restricting analysis to election years and indicating via a binary variable whether an incumbent continued (1) or did not continue (0) thus provides an indirect measure of voter behavior. While there are some obvious concerns about the fidelity of this measure to the concept of retrospective voting, the overall balance of divergences should be in favor of providing a conservative estimation of the amount of retrospection occurring. This is because, for an incumbent to be removed a critical threshold of vote changing needs to occur thus masking all retrospective voting effects which occur under that threshold.

One approach from here, with the dependent variable of presidential continuity in hand, would be to identify an objective measure of performance (such as average salaries) and run a

*Figure 2: Employment Change by Industry Between February 2020 and 2021*

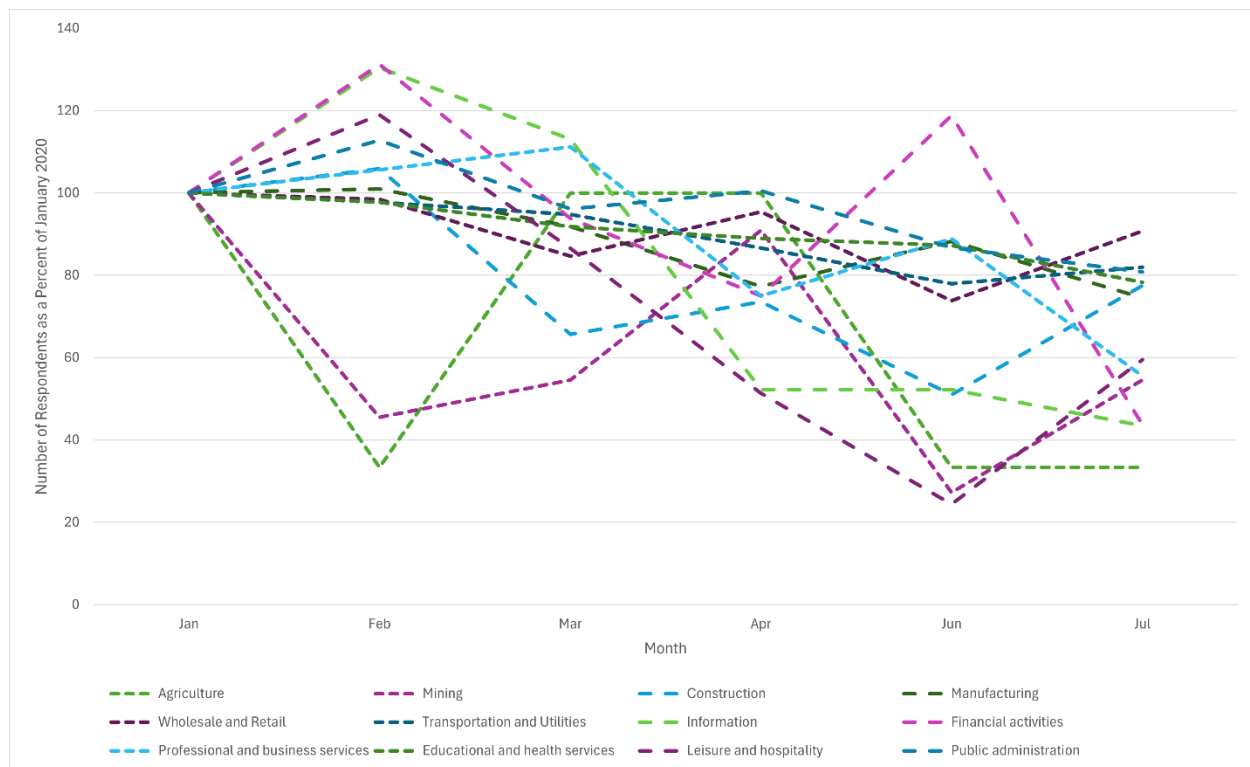


naïve regression of one variable on the other. There are severe and obvious inferential threats to such an approach, however. An unpopular leader may have a harder time maintaining union discipline when it came to wage negotiations, for instance, thus resulting in a decrease in average salaries without any connection to perceptions of performance.

To get around these threats, this work will make use of the fact that unions operate in distinct industrial fields while being mandated by federal law to adopt very similar institutional arrangements. As a result of this specialization, movements of the economy which are exogenous to past selection or performance can enforce a secular decline in one industry compared to another. Conceptually there is an almost immediate concern with doing this. If union members blamed their executives for the exogenous change in their fortunes, would they not be making an error in blame attribution? The perspective taken here is that economic shocks are precisely the sort of situation that union representatives are elected to deal with – to negotiate with the employer to save salaries and jobs regardless of the circumstances; the treatment is thus to exogenously make the jobs of union executives more difficult, and crucially there is nothing in the theory of retrospective voting discussed which implies that poor performance in explicit duties should be excused by circumstances.

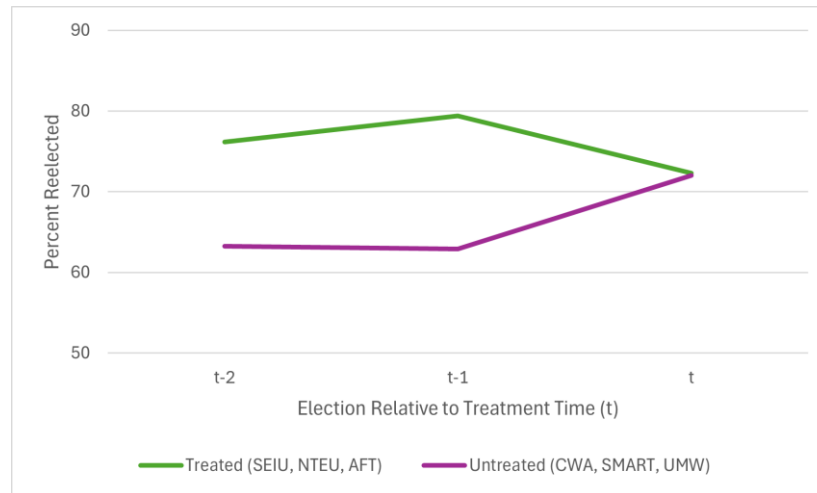


*Figure 3: Change in Union Respondents Jan-Jul 2020*



The specific event to be used here is the Covid-19 recession of 2020. The swift rise of the pandemic to public concern motivated economic disinvestment, mandated reductions in capacity for face-to-face services, and precipitated a sharp drop in demand for those same services. The latter two of these are of interest here because they imply very different things for different sectors of the economy. Services which could not be transitioned to remote distribution, such as hospitality and leisure, faced an apocalyptic precipice where the number of needed workers dropped by orders of magnitude. At the same time, the provision of goods if anything reached a fevered high as panic buying stretched supply chains.

These economic realities are reflected in the data released by the Bureau of Labor Statistics when contrasting the February 2020 employment data with that from February 2021, as seen in Figure 2. Hospitality, government, and education faced extreme declines while industries like

*Figure 4: Verification of Parallel Trends*

mining, transportation, and information were barely affected. Any concerns that these losses may not apply to union workers can be dispelled by Figure 3, which shows the number of union workers in each industry who replied to the monthly Current Population Survey. The low  $n$  of these monthly surveys (with each category getting respondents in the lower double digits typically) results in some noisy data, but the overall trends of industries like mining being unaffected while hospitality industries suffered remain visible.

The design that will be used to take advantage of these imbalances will be a Difference in Difference comparison of two sets of union locals. Sets of unions rather than just a particular union on either side were necessary to achieve sufficient statistical power. Each set was selected to be representative of the industries most and least affected by the Covid recession. For the untreated group, the union locals representing the Communication Workers of America (CWA); the International Association of Sheet Metal, Air, Rail and Transportation Workers (SMART); and the United Mine Workers (UMW) were selected. These unions represent the industries of information, transportation, and mining respectively. For the treated group, the union locals representing the Service Employees International Union (SEIU), National Treasury Employees Union (NTEU), and the American Federation of Teachers (AFT) were chosen. The industries of hospitality,

*Table 1: DiD Regression Results*

	<b>Reelection Rate</b>
<b>Time Period</b>	0.0905* (0.0238)
<b>Treatment Status</b>	0.1657* (0.0365)
<b>Period * Treatment</b>	-0.1609* (0.0529)
<b>Constant</b>	0.6293* (0.0176)
<b>Observations</b>	1871
<b>R<sup>2</sup></b>	0.01365
<b>Adjusted R<sup>2</sup></b>	0.01207
<b>Residual Std. Error</b>	0.4598 (df = 1867)
<b>F Statistic</b>	8.614* (df = 3; 1867)

*Note: \* $p < 0.05$*

government, and education were represented by those choices respectively. The treatment (the Covid recession) occurred in 2020, meaning that the untreated period of interest is the last election for each union local, the earliest of which was in 2017.

## VI. Results

Prior to proceeding to the main analysis, it is worth verifying the primary identification assumption of a Difference in Difference estimation – that of parallel pre-treatment trends. A visualization of the retention patterns of union executives in three separate periods can be found in Figure 4. Of interest here are the trends between  $t-2$  and  $t-1$ . While there is slight movement in this period (with each group actually moving in opposition to its eventual movement in the treatment year), both groups exhibit a remarkably stable degree of retention – mirroring the longitudinal pattern exhibited in Figure 1.

In the year of treatment, however, the two groups exhibit a dramatic convergence in their respective rates of retention. This movement, in a way, is the perfect empirical manifestation of full breadth of retrospective voting. In those industries in which incumbent performance was poor, incumbents were punished; in contrast, incumbents seem to have been rewarded in those industries

Table 2: DiD Replication Results

	<b>Reelection Rate</b>
<b>Time Period</b>	0.1329* (0.0369)
<b>Treatment Status</b>	0.0549 (0.4334)
<b>Period * Treatment</b>	-0.1193* (0.0579)
<b>Constant</b>	0.6587* (0.0369)
<b>Observations</b>	1140
<b>R<sup>2</sup></b>	0.00666
<b>Adjusted R<sup>2</sup></b>	0.00404
<b>Residual Std. Error</b>	0.4473 (df = 1136)
<b>F Statistic</b>	2.539* (df = 3; 1136)

*Note: \* $p < 0.05$*

which escaped the recession with very few losses of employment. This convergence provides an explanation for a curious point in Figure 1 in that the year 2020 had the highest overall rate of retention of any year for which that value was calculated despite widespread economic turmoil. Any punishment in affected industries must have been counterbalanced by reward elsewhere.

For more precise estimates of these effects, the results of the regression analysis are reported in Table 1. The interaction effect between period and treatment is the most salient here. It suggests that on average, being treated with a significant decline in incumbent performance results in a 16.09% percentage lower probability of incumbent retention as compared to those union locals that were not treated with an exogenous decline in incumbent performance. While certainly this effect is in the direction hypothesized by the theories on retrospective voting, there is room here to interpret what a 16.09% decline means substantively. Recall that union local elections are here taken to be a proximately ideal institutional environment for retrospective voting, and that the exogenous shock applied (via the Covid recession) was a decline in employment of extreme magnitude (many industries having a decline in employment of 40-60% per Figures 2 and 3). Thus,

despite conditions being optimal for the expression of retrospective voting behavior, we witness an upper bound which estimates that a supermajority (72.46%) of incumbents nevertheless retain office among the treated locals. This would suggest that the maximal degree to which voters will meaningfully engage in retrospective voting is fairly low.

Adding to this perception of a relatively low ceiling for retrospective voting is the explanatory power of the model itself. Only a little over 1% of the variation in retention between union locals is explained. To some extent a low  $R^2$  can be expected here, given the inexactness of treatment status, but overall this indicates that reaction to incumbent performance plays only a minor role in determining the retention of incumbents. There are a variety of potential explanations for the low ceiling for retrospective voting observed. Perhaps there is a hard limit to which *institutional incentives* can alter the motivations of voters. Likewise, there may only be so much cognitive burden than can be avoided by careful *institutional facilitation*. Finally, it might be said that union locals existing within a network of state and nonstate actors which influence the actions of their presidents might provide less *institutional clarity* than is presently argued in this paper.

An obvious concern with this analysis, however, comes from the selection of unions chosen as representative; there are only so many unions whose industry identification is consistent enough to make a good case for clean treatment status, but it is entirely possible that the selection in the primary analysis are outliers among unions which fit that criterion. To ease this concern somewhat, the core DiD model was replicated with a different set of unions – the results of which are shown in Table 2. Here the treated unions were the United Food and Commercial Workers (UFCW), the American Federation of Government Employees (AFGE), and National Education Association (NEA). They represent the industries of retail, government, and education respectively. The untreated unions were the National Air Traffic Controllers Association (NATCA), International

Brotherhood of Boilermakers (BBF), and the United Association of the Plumbing and Pipefitting Industry (PPF). Unions which in turn represented the industries of transportation, extraction, and utilities.

Looking at the interaction effect in Table 2, the term is again significant and in the direction hypothesized by retrospective voting literature (i.e. towards electoral punishment). It is also still substantively low, and in fact lower than that of the primary analysis while still being within a reasonable margin of error. Likewise, the degree to which the model explains variation in incumbent retention is extremely low.

## VII. Conclusion

The work on retrospective voting has been vast, but the question of its ceiling has not been investigated. To this end this work first constructed a theory around three dyads of cognitive-feature and institution which could ascertain the cumulative and relational influence of various mediating institutions which have been studied. From there it identified a proximately ideal context for retrospection – union locals – and a natural experiment of the Covid-19 recession to causally identify the retrospective behavior occurring in that context. The effect found – a 16.09% decline in the odds of retention upon being faced with maximally negative performance – is open to interpretation, but considering the identification of union locals as a proximately ideal condition for retrospective voting paired with the apocalyptic employment conditions locals were treated with this seems like a fairly low ceiling; furthermore, this relatively minor impact of retrospective punishment was confirmed in a replication of the initial analysis. What is less clear is whether the limits of this behavior come from *motivation*, *cognitive bias*, or *cognitive limitations*.

A major potential path for future research is to map the independent impact of each of these three domains of human characteristics on retrospective voting, as well as the degree to which particular configurations of *institutional clarity*, *simplicity*, and *incentivization* act upon them.

Some other potential paths come from the weaknesses of the present work. First is that the analysis lacks easy comparison to earlier works due to the use of a different methodology – difference in differences rather than a more traditional regression. The second is the clear concern with external validity of relying on a single shock to estimate retrospective voting; there are various instances of industry-specific shocks which might be fertile ground for a similar investigation. For the present, however, it is worth some consideration into how efficient a tool retrospective voting can be for ensuring accountability.

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